

Planning Commission Date: 5/28/03

Item No.

MILPITAS PLANNING COMMISSION AGENDA REPORT

Category: Public Hearings

Report prepared by: Kim Duncan

Public Hearing: Yes: X No:

Notices Mailed On: 5/16/03

Published On: 5/15/03

Posted On: 5/16/03

TITLE: USE PERMIT P-UP2003-17 AND "S"-ZONE APPROVAL-AMENDMENT P-SA2003-8**Proposal:** Request to install 12 telecommunication antennas and associated equipment on the building roof of Embassy Suites, zoned Town Center.**Location:** 901 East Calaveras Boulevard (APN 28-26-001)**RECOMMENDATION: Denial****Applicant:** Verizon Wireless, 4000 Executive Parkway, Ste. 515, San Ramon, CA 94583**Property Owner:** FelCor/CSS Holdings, L.P., Larry Mundy, Sam LaCorte, 3645 Warner Drive, San Jose, CA 95127**Previous Action(s):** EIA No. 394, Zone Change, Tentative Map, Use Permits, "S" Zone Application and Amendments**Environmental Info:** Exempt**General Plan Designation:** Town Center-Commercial**Present Zoning:** Town Center**Existing Land Use:** Hotel**Agenda Sent To:** Applicant, Property Owner
Art Nejara, P.O. Box 67171, Scotts Valley, CA 95067**Attachments:** Plans, photosimulations, letter from applicant, wireless sites map, radio station authorization, alternate sites, telecommunications questionnaire, power density study, prior use permit photosimulations, and site visit photographs.

BACKGROUND

In 1984, the Planning Commission approved Use Permit No. 644 and "S" Zone Approval for a 10-story, 307 room hotel with restaurant and conference rooms. In 1985, the Commission approved an amendment to modify the height of the hotel to nine (9) stories and 262 rooms. Subsequent approvals include a time extension, as well as "S" Zone amendments for a trash enclosure and building signage.

On June 24, 2001, the Planning Commission approved Use Permit No. 1587 and "S" Zone Amendment for the installation of twelve (12) telecommunication antennae screened by 4 tile-roof mansard screening structures, three additional matching "dummy" structures to ensure building symmetry, and associated equipment cabinet (in the existing cupola) on the rooftop of Embassy Suites. According to the applicant, due to the high costs of implementing the approved project, the use permit and associated building permits were not exercised and subsequently expired.

Site Description

The project site is a nine-story, 262 room hotel (Embassy Suites) located in the southwest section of Town Center. The site is bound by I-680 to the east, East Calaveras Boulevard to the south, Hillview Drive to the west, and Town Center to the north. The site is zoned Town Center ("TC") and surrounding land uses include Town Center ("TC") to the north and west, Industrial Park ("MP") to the south and Highway Services ("HS") to the southeast. Surrounding tenants include restaurants, commercial retail shops, and professional offices.

The Embassy Suites design reflects a combination of Mission and Spanish Eclectic architectural styles and, historically, the focus of design is on rooftop architectural elements. Architectural designs on Embassy Suites depicting this style include a blue tiled rooftop cupola, clay Spanish tile roof elements, arch shaped windows and roof parapets. Materials and colors, such as light tan plaster finish, wrought iron railings, decorative wall tiles, and canvas awnings are also typical of this architectural style. In addition, the building entrance features a porte cochere with a clay tile roof, fountain and clay tile paving.

THE APPLICATION

The Use Permit application (P-UP2003-17) is submitted pursuant to Section 57.02-15.1 of the Milpitas Zoning Ordinance (Conditional Use Permit for "telecommunication antenna facility"). The "S" Zone Amendment application is (P-SA2003-8) for site and architectural review of the antenna equipment, and is submitted pursuant to Section 42 of the Zoning Ordinance ("S" Zone Combining District).

PROJECT DESCRIPTION

The applicant proposes to install twelve (12), four (4) foot tall telecommunication panel antennae in two (2) new rooftop structures and associated equipment on top of the Embassy Suites. The new eight (8) foot tall rooftop structures would be located on the two (2) existing elevator penthouse structures, and built to match the existing building in materials and color. The

existing elevator penthouse structures are seven (7) feet, six (6) inches in height above the existing roof parapet (as shown on plans) and are visible from I-680, Hillview Drive, and East Calaveras Boulevard. The proposed structures will increase the height of the existing penthouse structures to fifteen (15) feet, six (6) inches above the parapet. The associated equipment would be located in the existing rooftop cupola, occupying approximately 200 square feet, and entirely screened from view.

ISSUES

Use Permit Approval

In order for the Planning Commission to approve any Use Permit request, the Commission must make certain required findings, as listed in the City's Zoning Ordinance (Milpitas Municipal Code XI-10-57.03-5). The required findings are listed below:

- The proposed use is consistent with the Milpitas Zoning Ordinance.
- The proposed use is consistent with the Milpitas General Plan.
- The proposed use at the proposed location will not be detrimental or injurious to property or improvements in the vicinity, nor to the public health, safety and general welfare.

Conformance with the Zoning Ordinance and General Plan

The Zoning Ordinance, Section 10-57 (57.01(b) and 57.02-15.1) allows the proposed telecommunication facility to be approved in this zoning district when it is deemed suitable to the site and not detrimental or injurious to the properties in the vicinity. The project is not consistent with the zoning because the penthouse extension structures would be a visual impact and incompatible with the building's architectural appearance. Likewise, General Plan consistency is problematic because General Plan Policy 2.a-I-10 ensures the City "foster community pride and growth through beautification of existing and future development." In this case, the increased height of the existing elevator penthouse structure with the addition of the proposed antenna structure detracts from the building architecture, is unrelated to the style of the building, and is visible from public rights-of-way.

Conformance with 'S' Zone Combining District

In order to approve the "S" Zone application, the Planning Commission must find that the layout of the site and design of the proposed structures are compatible and aesthetically harmonious with surrounding development. In this case, staff finds the proposed "S" zone application not to be compatible and aesthetically harmonious with the area. The applicant proposes to install twelve (12) telecommunication antennae screened by new eight (8) foot tall box-like structures mounted on the building's existing seven (7) foot, six (6) inch tall elevator penthouse structures. According to plans submitted by the applicant, the height of the existing elevator penthouse structures do not exceed the height of the existing curved parapets on the west and east elevations. On a site visit conducted by staff, it was noted the existing elevator penthouse structures are clearly visible from the I-680 overpass and the corner of Hillview Drive and East

Calaveras Boulevard (See Attachment A). The addition of an eight (8) foot tall rooftop structure on top of existing elevator penthouse structures will increase the total height to fifteen (15) feet, six (6) inches above the parapet. The additional height, location, and unrelated shape of the rooftop structures will increase the visibility of the rooftop structures from surrounding viewpoints, detract from the existing architecture and create unbalanced rooftop symmetry when viewed from the south (Calaveras Boulevard) and the east (I-680). This is of particular concern since Calaveras Boulevard is a primary thoroughfare in the city and a gateway to and through the city. In addition, the Embassy Suites is considered to be one of Milpitas' most attractive buildings, given its unique and well-executed style.

Community Impact

Antenna sites have proliferated greatly over the last few years, and applicants have demonstrated increasing ability to hide the antennas within architectural elements on buildings-a far superior aesthetic solution to the use of monopoles or mounting them directly onto the building parapet wall. The Planning Commission's recent approvals of telecommunication projects have illustrated an expectation that the antenna designs be incorporated into the building's architecture. Some recent examples include a clock tower (Jacklin Square), church steeple (South Park Victoria Baptist Church), placing antennas behind fiberglass screening designed to blend in with existing screening (Heald College), and the integration of architecturally compatible structures to blend in with existing building architecture (Embassy Suites; see Attachment B). Interestingly, the expired Embassy Suites antennae approval has been heralded by staff as a superb example of how effectively stealth antennas can be designed. It has been used as a point of comparison and standard for more recent approvals.

In terms of radio frequency emissions, the Federal law preserves the City's authority to regulate the placement, construction, and modification of personal wireless service facilities (47 U.S.C. 332(c)(7)(A).) However, federal law does impose a limitation on this authority in the area of radio frequency (RF) emissions. The City is prohibited by federal law from regulating the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of RF emissions to the extent the facilities comply with the Federal Communications Commission's (FCC) regulations concerning such emissions. (47 U.S.C. 332(c)(7)(B)(iv).

The FCC has established guidelines that place limits on human exposure to RF fields generated by personal wireless service facilities. These guidelines have been endorsed by the U.S. Environmental Protection Agency and the Food and Drug Administration. The FCC requires all personal wireless facilities to comply with these guidelines.

The City, however, may still verify that applicants are in compliance with the FCC's guidelines. Therefore, the City requires applicants applying for use approval for any telecommunications device to submit a power density report. This report is reviewed by the City's Telecommunications Advisory Commission to ensure compliance with the FCC's guidelines. To the extent that an applicant's facilities, as proposed, are not in compliance with the FCC's guidelines, the City may require the applicant to make appropriate modifications to the facilities to ensure compliance.

Environmental Review

This project is categorically exempt from further environmental review pursuant to Class 3, Section 15303 of the California Environmental Quality Act (CEQA Guidelines). This section addresses "New construction or conversion of small structures...installation of small new equipment and facilities in small structures." Furthermore, the California Environmental Quality Act (CEQA) does not require an environmental review for denied projects.

Telecommunications Commission Review

The City's Telecommunications Commission reviewed the previously approved antenna project (Use Permit No. 1587) on June 18, 2001 and concluded that the project is in compliance with FCC guidelines. While the project design of this Use Permit (P-UP3002-17) application has changed, the type and number of proposed antennae remains the same as the previously approved application. Therefore, the Telecommunication Commission Chair determined this application does not warrant further review by the Telecommunication Commission.

Conclusion

Because the additional height, shape and location of the proposed rooftop structures will increase the visibility from surrounding viewpoints, detract from existing architecture and create unbalanced rooftop symmetry, staff recommends denial of the proposed telecommunications facility. Further redesign of the structures should be investigated by the applicant for resubmittal and review.

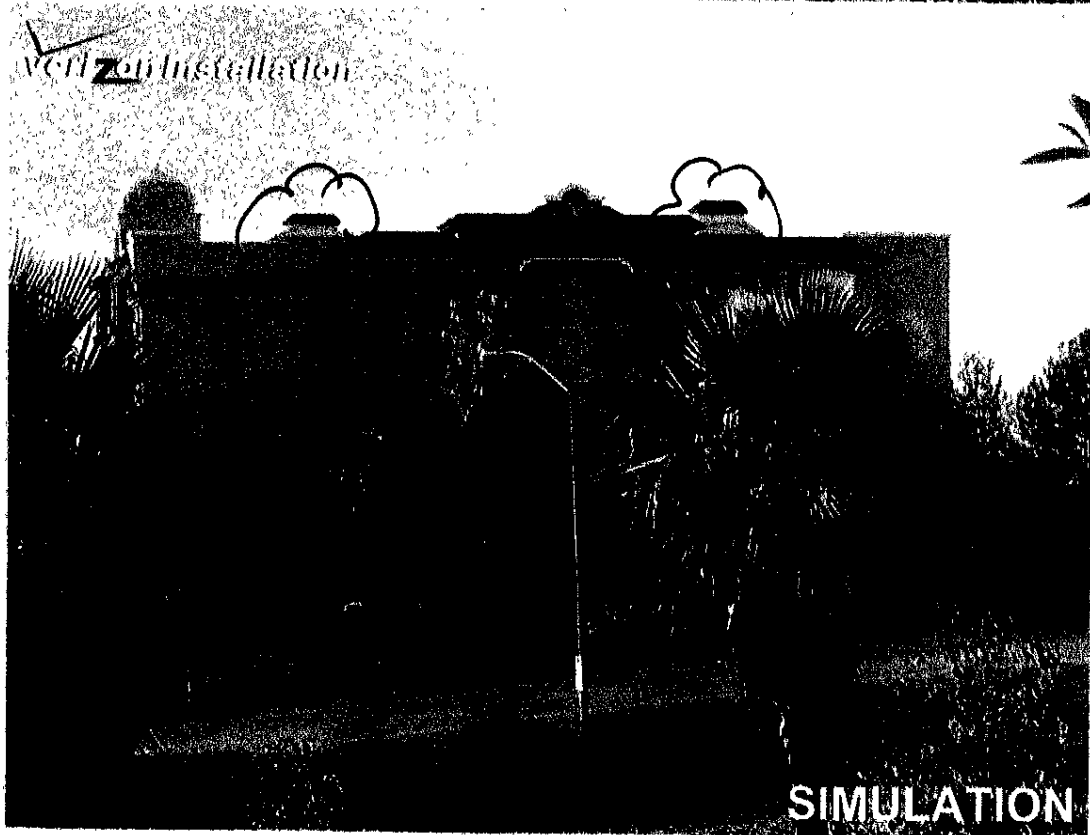
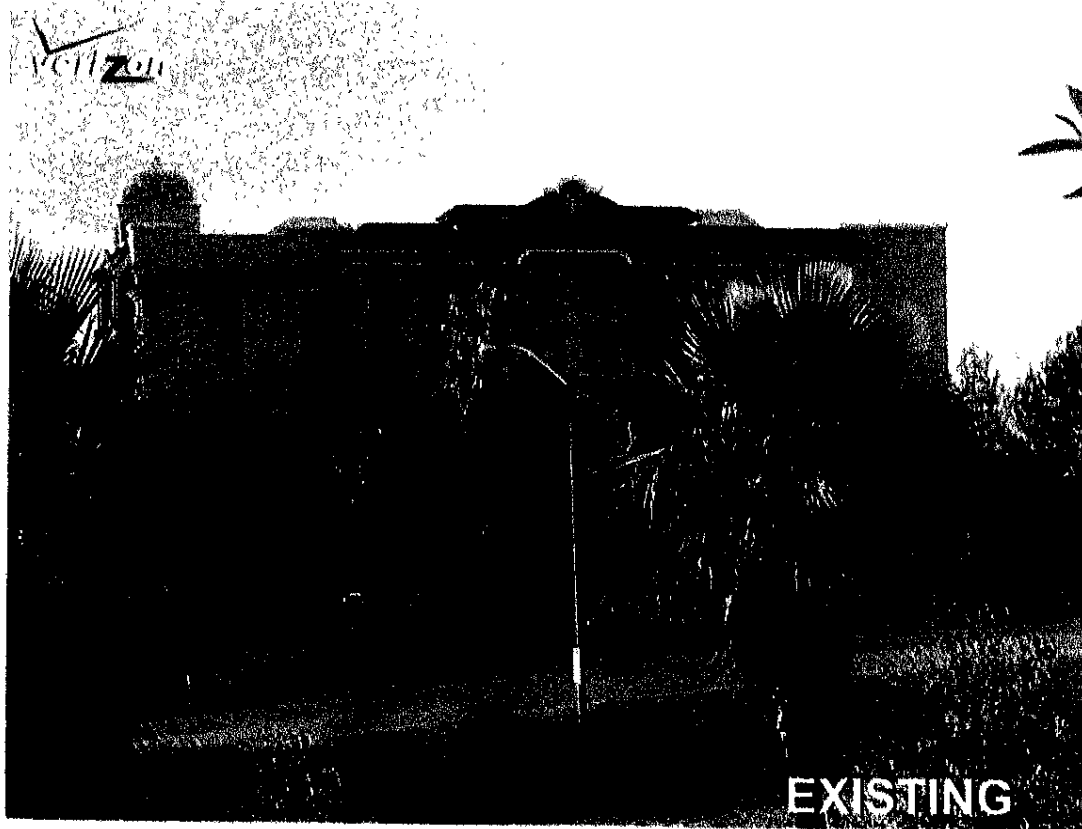
RECOMMENDATION

Close the public hearing. Deny Use Permit No. P-UP2003-17 and "S"-Zone Amendment No. P-SA2003-8 for Verizon Wireless, subject to the Findings listed below.

FINDINGS

1. The project is inconsistent with the General Plan in terms of beautification policies, specifically those that foster community pride, because the rooftop projections are visible from key, heavily traveled public rights-of-way, create an asymmetrical appearance and detract from the aesthetics of the building.
2. The project is inconsistent with Zoning Ordinance Section 42 and Section 57 (57.01(b) and 57.02-15.1) requiring telecommunication facilities in this zoning district be suitable to the site and not detrimental or injurious to the properties in the vicinity. The current project is not suitable because the proposed rooftop structures would be a negative visual impact and incompatible with the building's architectural appearance, considered to be one of the most attractive and unique buildings in the city.

**EAST ELEVATION
VIEWED FROM HWY 680**



CA-1898

SITE NAME: HWY 680 / CALAVERAS
SITE ADDRESS: 901 EAST CALAVERAS, MILPITAS, CALIFORNIA

**SOUTH ELEVATION
CALAVERAS BLVD.**

verizon



verizon installation



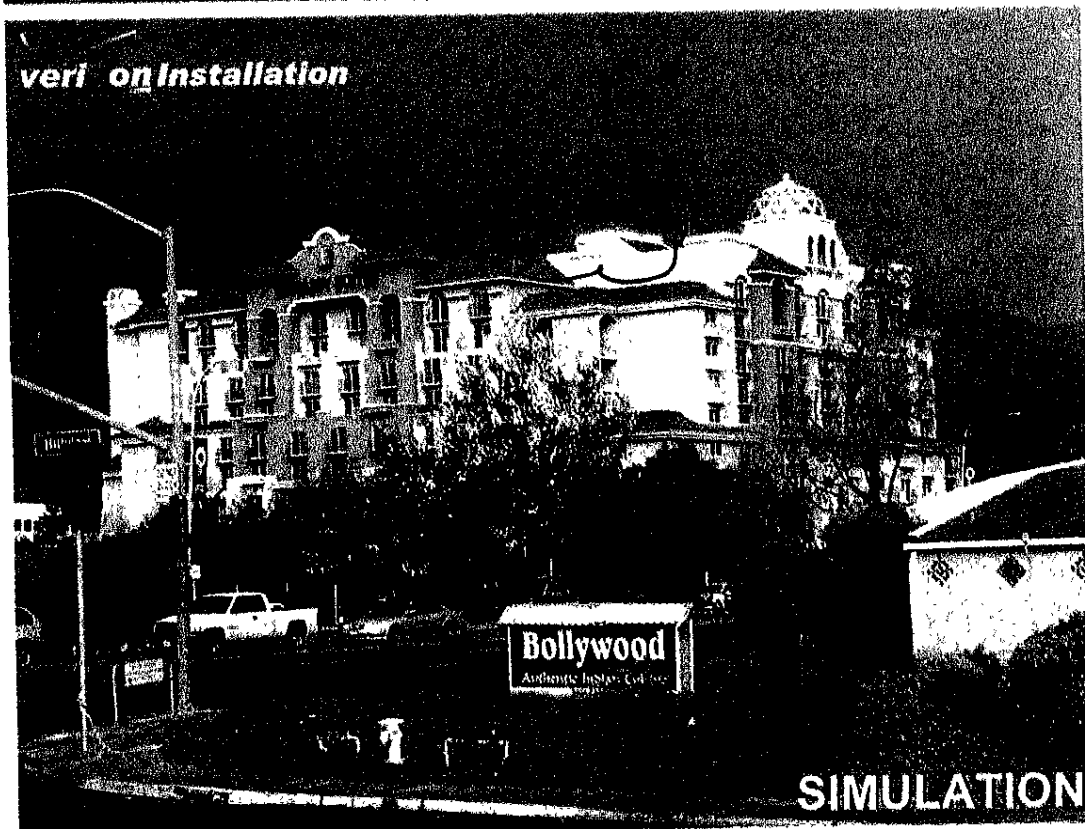
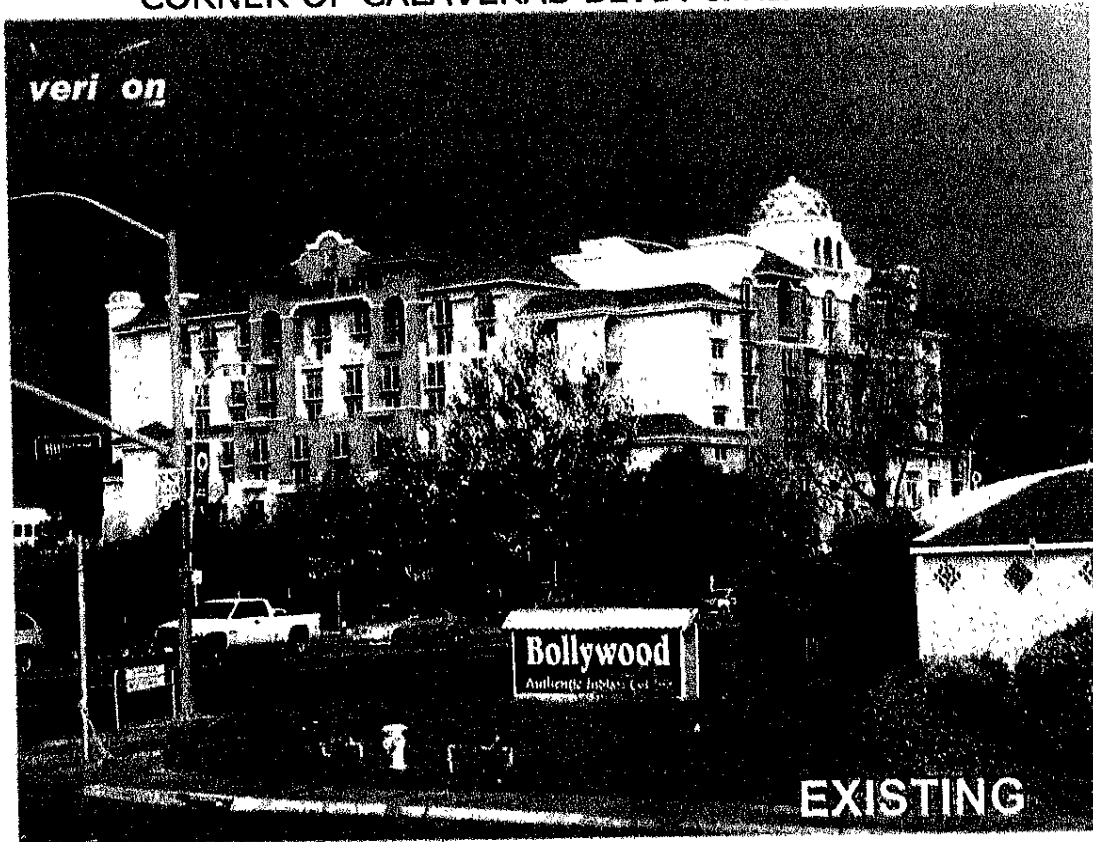
CA-1898

SITE NAME: HWY 680 / CALAVERAS

SITE ADDRESS: 901 EAST CALAVERAS, MILPITAS, CALIFORNIA

Prepared for **GENERAL DYNAMICS** by: **CREATIVE CONCEPTS** Phone (209) 832-1270 E-Mail Sales@CC-IT.Com
Worldwide Telecommunication Systems

SOUTHWEST ELEVATION
CORNER OF CALAVERAS BLVD. & HILLVIEW



CA-1898

SITE NAME: HWY 680 / CALAVERAS

SITE ADDRESS: 901 EAST CALAVERAS, MILPITAS, CALIFORNIA

WEST ELEVATION
VIEWED FROM HILLVIEW DRIVE



CA-1898
SITE NAME: HWY 680 / CALAVERAS
SITE ADDRESS: 901 EAST CALAVERAS, MILPITAS, CALIFORNIA

ATTACHMENT A



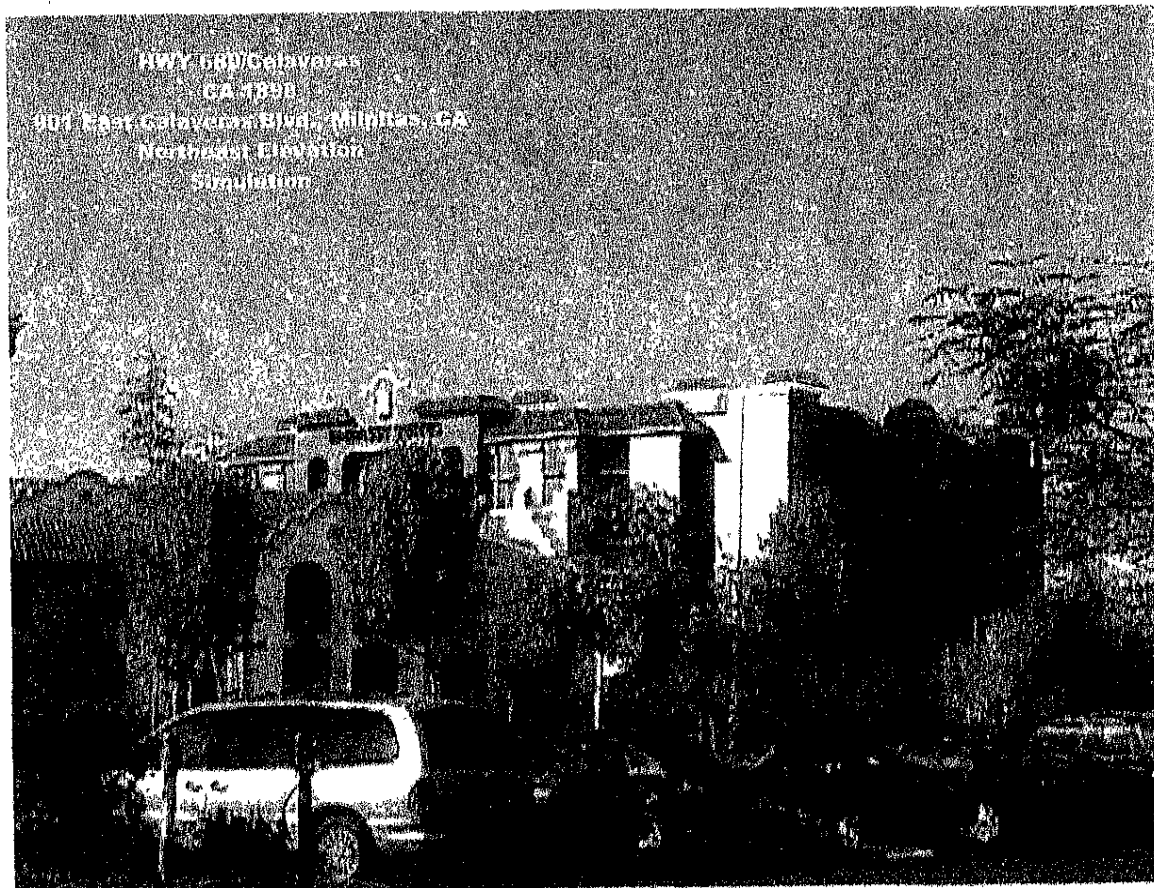
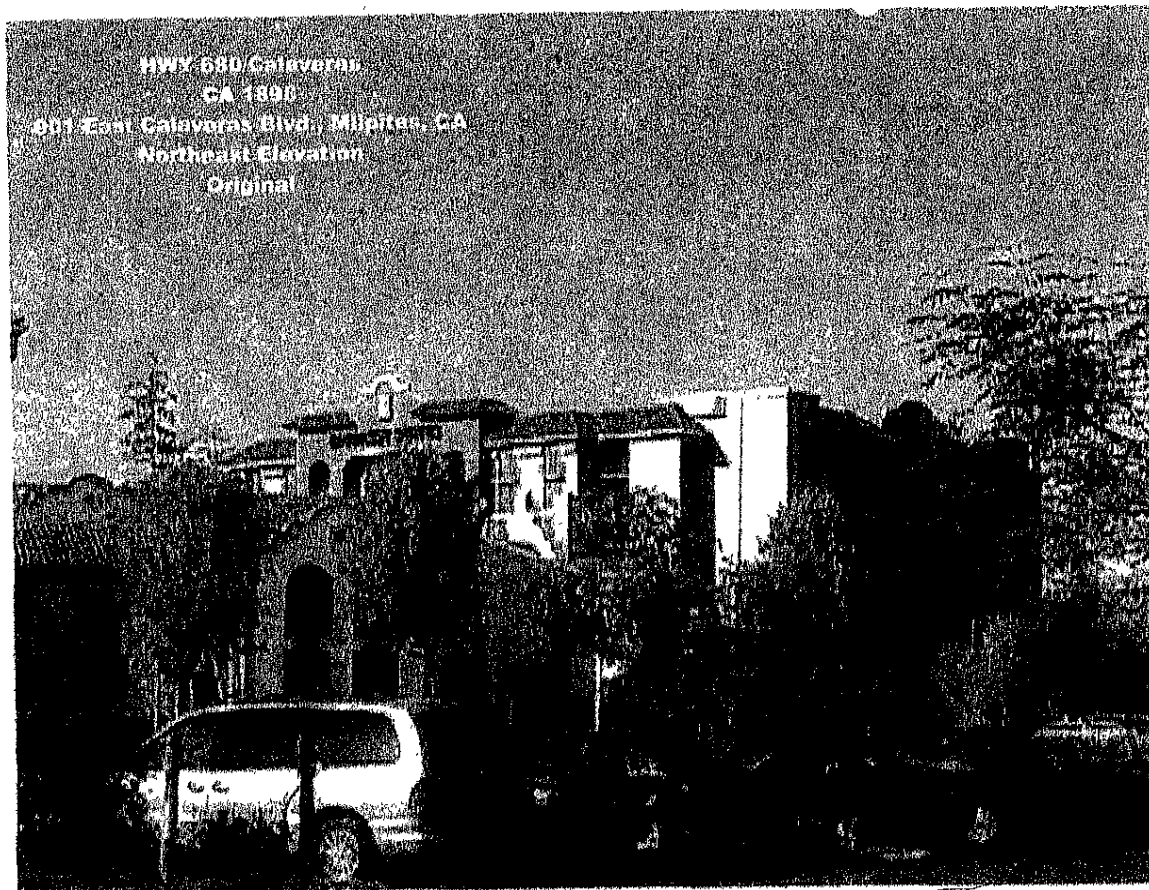
EXISTING VIEW FROM S. HILLVIEW / E. CALAVERAS BLVD
INTERSECTION (SW CORNER)
(WEST ELEVATION)



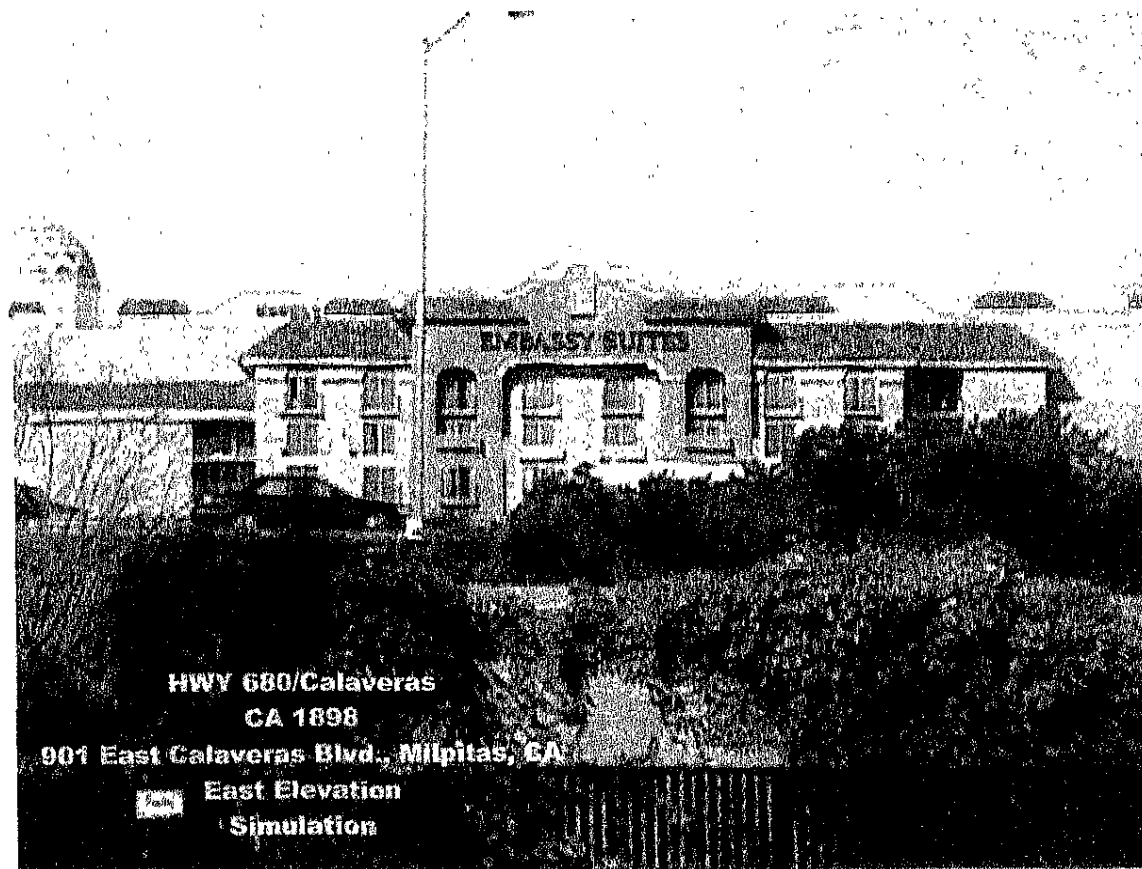
EXISTING VIEW FROM I680/CALAVERAS BLVD.
OFFRAMP (SOUTH)
(EAST ELEVATION)

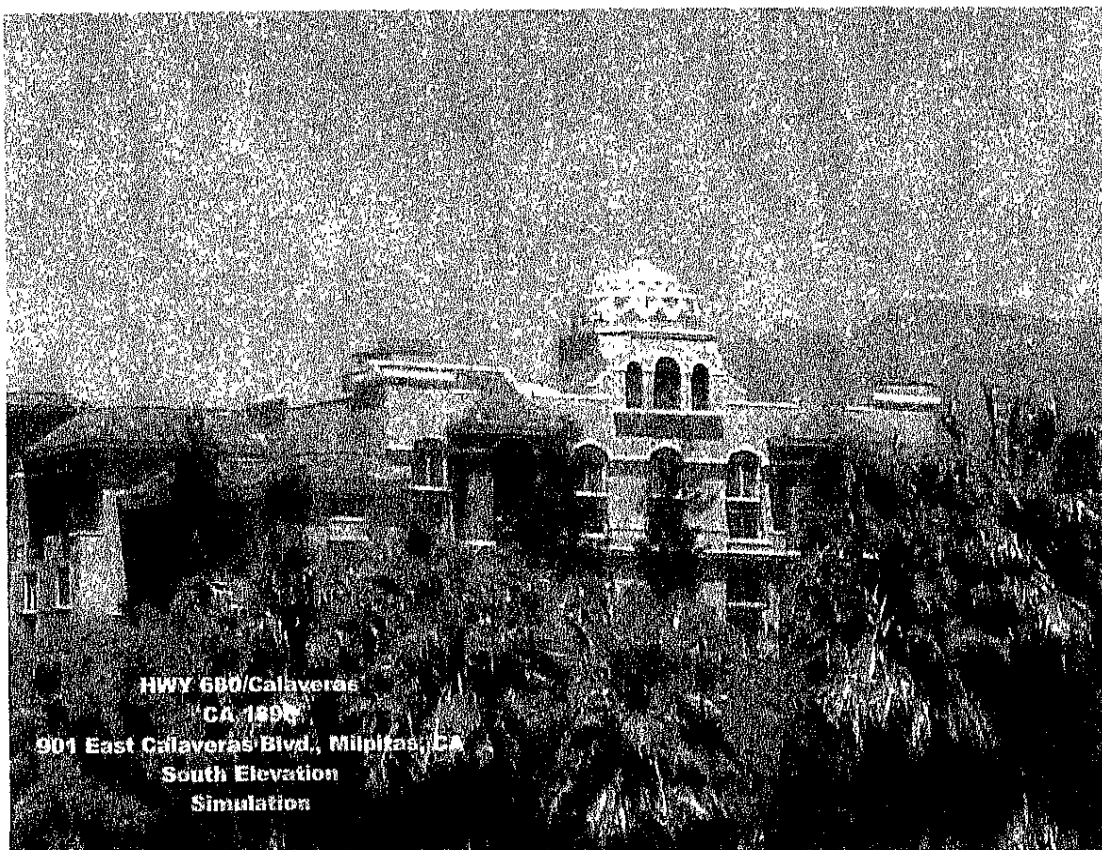
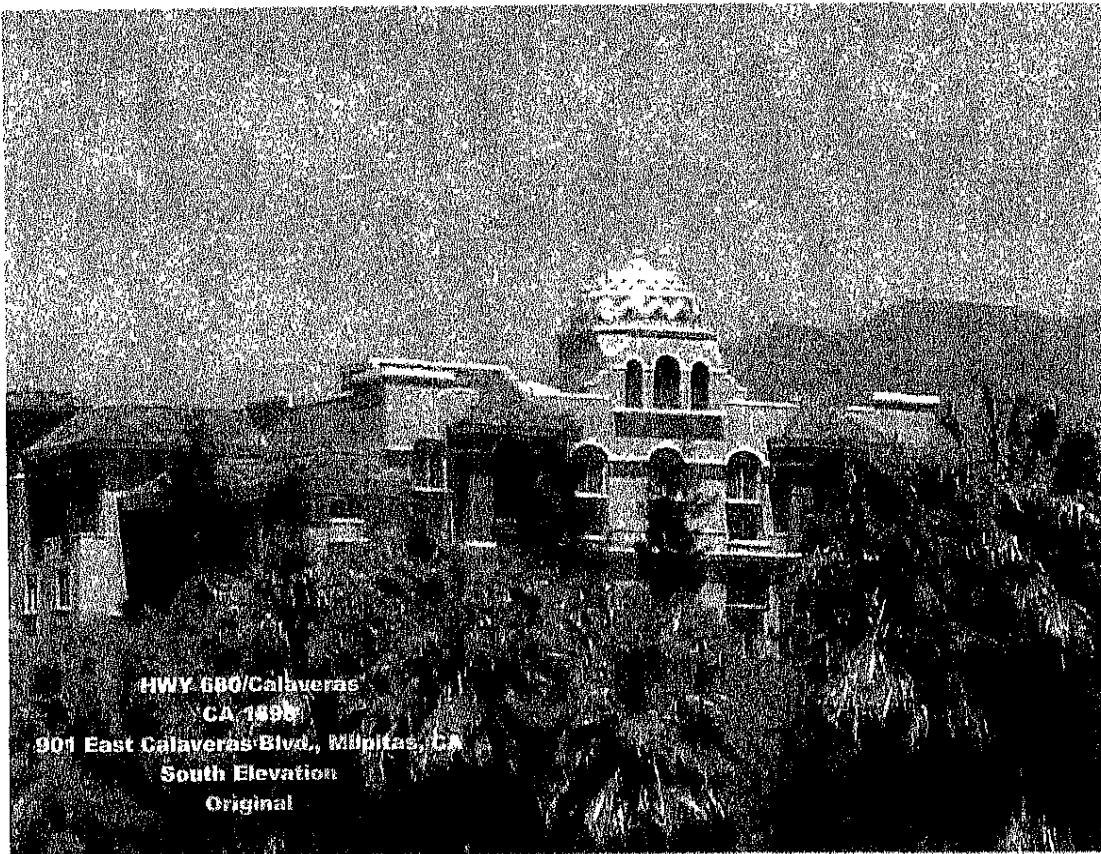


EXISTING VIEW FROM HUNGRY HUNTER
(EAST ELEVATION)



PREVIOUSLY APPROVED USE PERMIT No. 1587
ROOFTOP TELECOMMUNICATIONS
ANTENNAS





Proposed Verizon Facility Embassy Suites, 901 East Calaveras Boulevard

Verizon Wireless and other primary wireless telecommunication carriers servicing the San Francisco Bay Area have experienced a rapid growth in customers which continues to tax existing networks. As a result particular areas experience an increase in dropped calls and busy signals that are not conducive to optimum performance expected by customers, businesses and private citizens alike.

Verizon currently proposes new wireless sites where problems like this have occurred or where circumstances indicate they will occur in the near future. This proposed site at the Embassy Suites Hotel is one example of a location needed to assist system performance in an over-burdened area.

This over-burdened area is specifically along Highway 680 between Jacklin Road and Landess Avenue. The closest existing Verizon sites are operating at capacity. In order to relieve this burden a new site in this area, at the Embassy Suites Hotel is proposed.

The proposed rooftop design includes 12 panel antennas to be placed in two locations. Each location will have full screening which will appear to be simple roof extensions of existing elevator penthouses. Radio equipment will be housed within an existing penthouse on the roof level and will not be visible. A Radio Frequency Report and full photo-simulations are included with this proposal.

Project Description

This current proposal is an amendment of an initial design previously approved by the City. The initial design included the same number and type of antennas on the roof level of the structure. The antennas were to be housed in 8 separate enclosures, each with a roof to match the building. Several of the enclosures were actually "dummy" structures that were proposed for design symmetry since all of the elements were placed near the edges of the roofline. This extensive design scheme also led to extensive construction costs which needed attention.

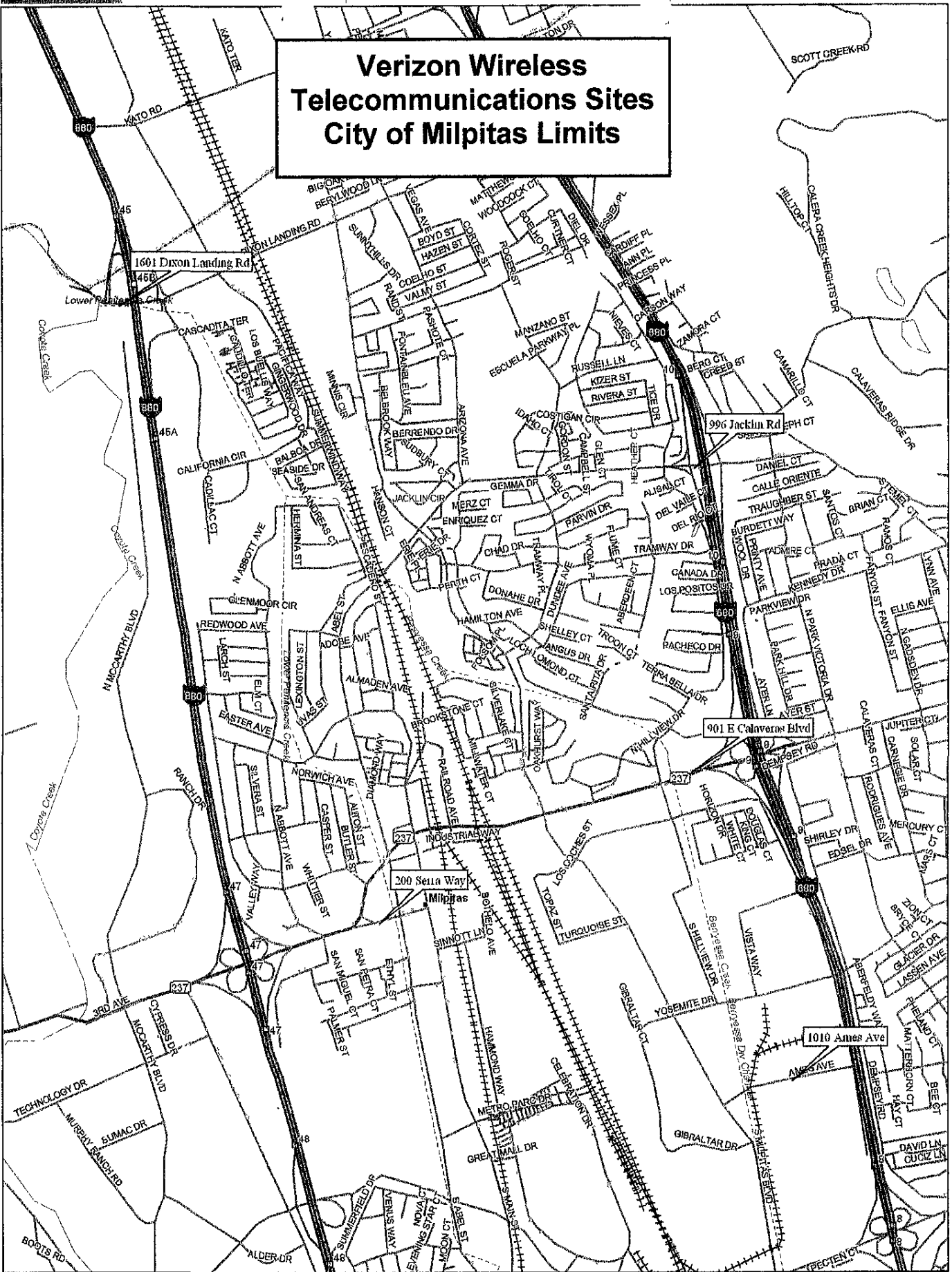
The current amended design calls for housing all the same antennas in two similar structures, thereby reducing the proposed mass on the roof from 8 enclosures to 2 structures. The two obvious existing locations on the roof to place the new structures are the existing elevator penthouses. They are in the middle portions of the roof and have sufficient height to allow the antenna to be

angled for satisfactory signal transmission over the edge of the roof. In this case, the further away the antennas are from the edge of the roof, a slight elevation gain will be necessary to maintain the signal transmission quality they would have if they were on the edge of the roof.

The new roof enclosures are proposed to be placed on the top of the elevator penthouses and they would house the 4' tall panel antennas as previously approved. These are the shortest antennas possible to keep the enclosure height to a minimum. The new enclosures would receive a roof element similar to the previous design and matching the existing building. This proposal also utilizes the same number (12) of 4' panel antennas with no change in power emissions or signal strength transmission as per the previously approved design.

Given the reduction in mass due to the reduced number of roof enclosures that were previously approved, and the number of existing design elements inherent in the architectural design of the building, it is anticipated that the current proposal will be an otherwise inconspicuous added element to the existing hotel.

Verizon Wireless Telecommunications Sites City of Milpitas Limits



* NOTE: IF ORIGIN IS UNCHANGED, RE-SUBMIT ORIGINAL

City of Milpitas
Planning Division
455 E. Calaveras Blvd.
Milpitas, CA 95035
(408) 586-3279

Questionnaire for Telecommunication Facility Providers

All applicants requesting to install telecommunications facilities within the City of Milpitas must complete this questionnaire as part of their use permit application submittal.

Applicant Name: ART NAJERA (FOR VERIZON WIRELESS)

Applicant Address: P.O. BOX 67171, SCOTTS VALLEY, CA. 95067

Applicant Phone: (831) 430-0306

Applicant Fax and e-mail address: (831) 438-0486 ART.NAJERA@GPWIRELESS.COM

Provide a brief description of project (Telecommunications Facility): INSTALLATION OF A NEW VERIZON WIRELESS FACILITY ON ROOFTOP OF AN EXISTING BUILDING CONSISTING OF 12 PANEL ANTENNAS SCREENED FROM VIEW AND RADIO EQUIPMENT CABINETS WITHIN AN EXISTING PENTHOUSE STRUCTURE

Location of Project: EMBASSY SUITES, 901 E. CALAVERAS BLVD

1. Please indicate below the frequency range you plan to use?

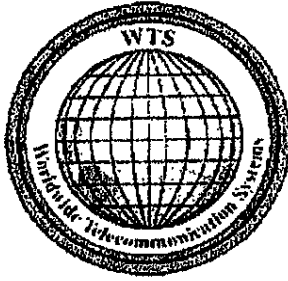
- ☐ VHF Low-Band (30-50 Mhz or 72-76 Mhz)
- ☐ VHF High-Band (136-174 Mhz or 220-222 Mhz)
- ☐ UHF or T-Band (406-420 Mhz or 450-470 Mhz or 470-512 Mhz)
- ☒ 800 or 900 Mhz Band (800-960 except 900 Mhz Spread Spectrum)
- ☐ 900 Mhz Spread Spectrum (902-928 Mhz)
- ☐ Other than specified above (State frequency band in Mhz). Describe: _____

2. Please indicate below the channel/system proposed for use?

- ☐ A single channel
- ☐ Multiple channel
- ☐ A frequency agile system
- ☒ A spread spectrum system
- ☐ Other than specified above. Describe: _____

3. Please indicate below the frequency range you plan to use?

- ☐ Narrow band (± 5 KHz or less deviation)
- ☐ Broad band (greater than ± 5 KHz deviation)
- ☒ Spread Spectrum
- ☐ Other than specified above. Describe: _____



GENERAL DYNAMICS

Worldwide Telecommunication Systems

Alternatives Analysis for the Proposed Verizon Wireless Facility at Embassy Suites, 901 E. Calaveras Blvd

Verizon proposes an additional site in order to offload current capacity problems. The Alpha face of the existing cell site is at its maximum capacity.

We require coverage for Highway 680 between Jacklin & Landess roads, and the surrounding residential area. A height of no less than 60' AGL is needed for adequate coverage.

Below is a list of two other sites that were investigated. They were the only other locations which met the above requirements.

- Spectrasite Tower CA-0266 located at 980 Los Coches Rd.
Nextel is currently located on this monopole. Contact:
Holly Bender, Spectrasite Communications
100 Regency Forest Dr, Suite 200
Cary, NC 27511
(919) 465-6604.
- CellularOne Calaveras Site #518 on Dempsey Rd.
Contact:
Phillip Thomas, Cell One Collocations
651 Gateway Blvd., Suite 1300
South San Francisco, CA 94080
(650) 740-3091

Verizon's radio frequency engineer rejected both monopoles because of interference potential.

**Verizon Wireless • Proposed Base Station (Site No. CA-1898)
901 East Calaveras Boulevard • Milpitas, California**

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a telecommunications carrier, to evaluate the proposed base station (Site No. CA-1898) to be located at 901 East Calaveras Boulevard in Milpitas, California, for compliance with appropriate guidelines limiting human exposure to radio frequency electromagnetic fields.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent Institute of Electrical and Electronics Engineers ("IEEE") Standard C95.1-1999, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes nearly identical exposure limits. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

The most restrictive thresholds for exposures of unlimited duration to radio frequency ("RF") energy for several personal wireless services are as follows:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Personal Communication ("PCS")	1,950 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Cellular Telephone	870	2.90	0.58
Specialized Mobile Radio	855	2.85	0.57
[most restrictive frequency range]	30-300	1.00	0.20

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "cabinets") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables about 1 inch thick. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the

**Verizon Wireless • Proposed Base Station (Case No. CA-1898)
901 East Calaveras Boulevard • Milpitas, California**

horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 attached describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, including drawings by L.D. Strobel Co. Inc, dated September 9, 2002, it is proposed to mount twelve Allen Telecom Model DB874H83 directional panel antennas behind new fiberglass screens to be installed above the two elevator penthouses of the nine-story Embassy Suites building located at 901 East Calaveras Boulevard in Milpitas. The antennas would be mounted at an effective height of about 103¹/₂ feet above ground, 19 feet above the roof, and would be oriented in three groups of four towards 80°T, 150°T, and 350°T. The maximum effective radiated power in any direction would be 750 watts, representing six channels operating simultaneously at 125 watts each. There are reported no other wireless telecommunications base stations installed nearby.

Study Results

The maximum ambient RF level anywhere at ground level due to the proposed Verizon operation is calculated to be 0.00064 mW/cm², which is 0.11% of the applicable public limit. The maximum calculated level anywhere on the roof of the building is 6.8% of the public exposure limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

Recommended Mitigation Measures

Since they are to be mounted above the roof of the building, the Verizon antennas are not accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, no access



**Verizon Wireless • Proposed Base Station (No. CA-1898)
901 East Calaveras Boulevard • Milpitas, California**

within 5 feet in front of the antennas themselves, such as might occur during building maintenance activities, should be allowed while the site is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory warning signs* at roof access location(s) and on the screen in front of each transmitting antenna, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines.

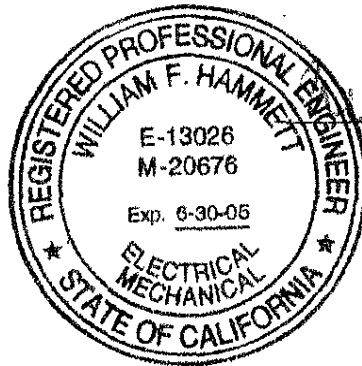
Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by Verizon Wireless at 901 East Calaveras Boulevard in Milpitas, California, can comply with the prevailing standards for limiting human exposure to radio frequency energy and, therefore, need not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2005. This work has been carried out by him or under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

December 30, 2002



William F. Hammett
William F. Hammett, P.E.

* Warning signs should comply with ANSI C95.2 color, symbol, and content conventions. In addition, contact information should be provided (e.g., a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

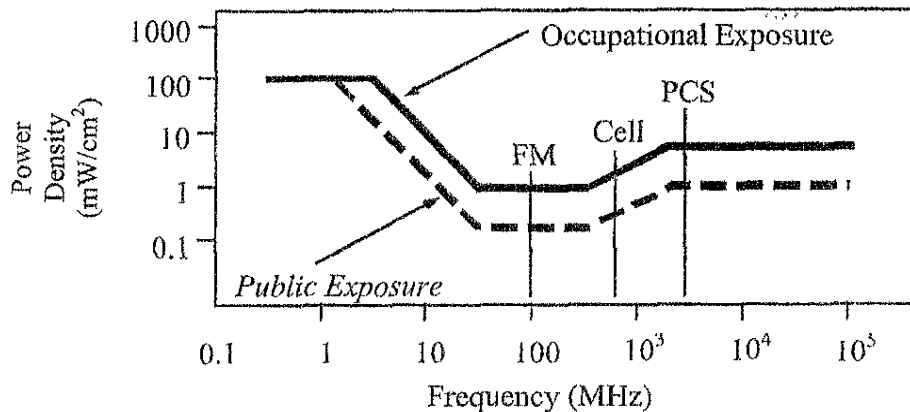


FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements, which are nearly identical to the more recent Institute of Electrical and Electronics Engineers Standard C95.1-1999, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz." These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency	Electromagnetic Fields (<i>f</i> is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√ <i>f</i>	<i>1.59√f</i>	√ <i>f</i> /106	<i>√f/238</i>	1/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

RFR.CALCTM Calculation Methodology Assessment by Calculation of Compliance with Human Exposure Limitations

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements, which are nearly identical to the more recent Institute of Electrical and Electronics Engineers Standard C95.1-1999, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz." These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field. Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications cell sites. The near field zone is the distance from an antenna before which the manufacturer's published, far field antenna patterns have formed; the near field is assumed to be in effect for increasing D until three conditions have been met:

$$1) D > \frac{2h^2}{\lambda} \qquad 2) D > 5h \qquad 3) D > 1.6\lambda$$

where h = aperture height of the antenna, in meters, and
 λ = wavelength of the transmitted signal, in meters.

The FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives this formula for calculating power density in the near field zone about an individual RF source:

$$\text{power density } S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}, \text{ in mW/cm}^2,$$

where θ_{BW} = half-power beamwidth of antenna, in degrees, and
 P_{net} = net power input to the antenna, in watts.

The factor of 0.1 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates the distances to the FCC public and occupational limits.

Far Field. OET-65 gives this formula for calculating power density in the far field of an individual RF source:

$$\text{power density } S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}, \text{ in mW/cm}^2,$$

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

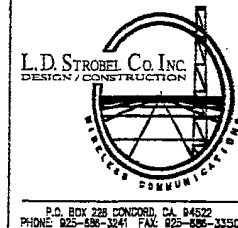
The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 ($1.6 \times 1.6 = 2.56$). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain at the site, to obtain more accurate projections.

verizonwireless

HWY. 680 / CALAVERAS

901 East Calaveras Blvd.
Milpitas, California 95035

Location No.:
PS15002721131



REVISIONS

NO.	DATE	DESCRIPTION
1	4/4/01	PLANNING
2	4/23/01	PLANNING
3	4/30/01	PLANNING
4	5/12/01	CONST.
5	5/22/01	CONST.
6	10/09/01	CONST.
7	11/26/01	CONST.
8	9/9/02	PLANNING
9	12/28/03	PLANNING

SITE ADDRESS:
901 EAST CALAVERAS BLVD.
MILPITAS, CA 95035
SANTA CLARA COUNTY
VNC: 028-26-001

VERIZON WIRELESS
2785 MITCHELL DR. SUITE B
WALNUT CREEK, CA 94598

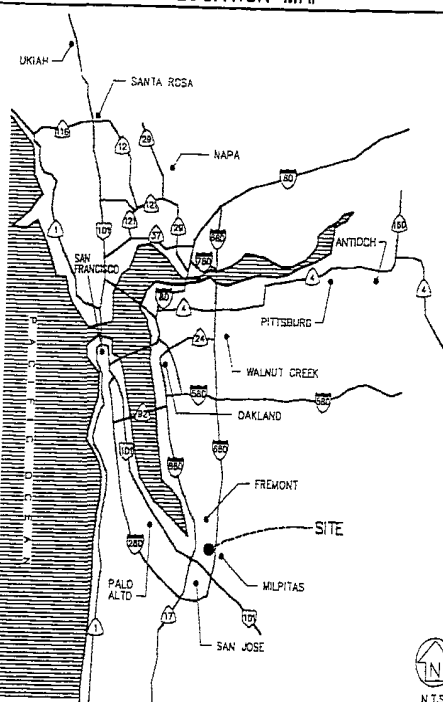
PROPOSED ANTENNA INSTALLATION
HWY 680 / CALAVERAS
LOCATION No. PS15002721131

verizonwireless

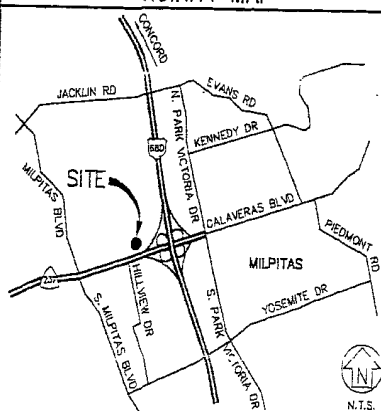
DRAWN: JWG DATE: 3/6/03
FILE: 2229-T
SHEET NO.

T-1

LOCATION MAP



VICINITY MAP



SHEET INDEX

- T-1 COVER SHEET: PROJECT TITLE, MAPS, AND INFORMATION
- C-1 SURVEY
- A-1 SITE/ROOF PLAN
- A-2 ELEVATIONS
- A-3 ELEVATIONS

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. CALIFORNIA ADMINISTRATIVE CODE (INCLUDING TITLES 24 & 25)
2. 1997 CALIFORNIA BUILDING CODE
3. 1997 CALIFORNIA MECHANICAL CODE
4. 1997 CALIFORNIA PLUMBING CODE
5. 1996 CALIFORNIA ELECTRIC CODE
6. COUNTY ORDINANCES

ACCESSIBILITY REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 1994 UNIFORM BUILDING CODE SECTION 3103 ITEM C (2a).

PROJECT DESCRIPTION

INSTALLATION OF COMMUNICATIONS ANTENNA FACILITY, INCLUDING EQUIPMENT ROOM INSIDE OF EXISTING ROOF TOP STRUCTURE, ANTENNAS, ANTENNA SCREENING, AND CABLE TRAYS AND CABLES.

BUILDING/SITE DATA LEGEND

A.P.N.: 028-26-001
LOCATION NUMBER PS15002721131
ZONING: TC
ANTENNA TYPE: 4'-0" PANEL ANTENNAS
3 SECTORS - 4 ANTENNAS PER SECTOR
1 GPS ANTENNA
(TOTAL OF 12 VERIZON CELLULAR ANTENNAS)

PROJECT DATA

OWNER: FELCOR/CSS HOLDINGS, L.P.
545 EAST JOHN CARPENTER FREEWAY
SUITE 1300
RYNOL, TX 75062
CONTACT: LARRY MUNDY
(972) 444-4900

APPLICANT: VERIZON WIRELESS
2785 MITCHELL DR. SUITE B
DEPT 500 NETWORK PLANNING
WALNUT CREEK, CA 94598
CONTACT: JAMES GRAHAM
(925) 278-5479

AGENT: GENERAL DYNAMICS
4000 EXECUTIVE PKWY. STE. 515
SAN RAMON, CA 94583
CONTACT: TONY TONSTAD
(415) 385-8815

CIVIL ENGINEER: L.D. STROBEL CO. INC.
1018-E SHARY DR.
CONCORD, CA 94522
CONTACT: LARRY STROBEL
(925) 585-2244

STRUCTURAL ENGINEER: C.L. ALFARO ASSOCIATES
338 SUMMERWOOD DR.
FREMONT, CA 94535
CONTACT: CONRAD ALFARO
(510) 787-2492

ELECTRICAL ENGINEER: RAY L. JACKSON AND ASSOC.
1100 LAKEVIEW DR.
BURLINGAME, CA 94010
CONTACT: RAY JACKSON
(650) 347-5594

X OF X

J.E. SCHURICHT & ASSOCIATES

2300 CONTRA COSTA BLVD., #220
PLEASANT HILL, CA 94523
(925) 674-1151
(925) 674-1314

REVISIONS

NO.	DATE	DESCRIPTION
1	2/1/01	Preliminary
2	11/15/03	New ant. loc.

SITE ADDRESS:
501 EAST CALAVERAS BLVD
MILPITAS, CA 95031
APR 028 20-001

VIRGIN MIREY-SS
2785 MITCHELL DR. SUITE 9
WATFUT CREEK, CA 94596

PROPOSED ANTENNA INSTALLATION
HWY 680/CALAVERAS
LOCATION No. P15002721131

verizonwireless

DRAWN: PGM/GJM DATE: 2-1-01
DESIGN: NO. C10860
SHEET NO.

C-1

NOTES

DATE OF SURVEY: JANUARY 26, 2001
SURVEYED BY: J.E. SCHURICHT & ASSOCIATES
RCE 28830

BOUNDARY SHOWN IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING A GRAPHIC DESCRIPTION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTS FOUND DURING THE FIELD SURVEY. NO EASEMENTS WERE RESEARCHED OR PLOTTED. PROPERTY LINES AND LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED EXCEPT AS SHOWN ON THIS PLAN. NO PROPERTY MONUMENTS WERE SET.

DESCRIPTION OF PARCEL:

LEGAL DESCRIPTION IS FOUND IN ADVANCE TITLE COMPANY PRELIMINARY REPORT ORDER NUMBER 13983 DATED DECEMBER 1, 2000. THE LAND REFERRED TO IN SAID REPORT IS SITUATED IN THE COUNTY OF SANTA CLARA, STATE OF CALIFORNIA, FURTHER DESCRIBED AS FOLLOWS:

LOT 1, PARCEL MAP FILED OCTOBER 22, 1985, MAP BOOK 550, PAGES 50 AND 51, SANTA CLARA COUNTY RECORDS.

DESCRIPTION OF PROJECT AREA:

THE EQUIPMENT AND ANTENNAS ARE TO BE LOCATED UPON THE ROOF OF THE EXISTING BUILDING, LOCATION AS GENERALLY SHOWN ON THIS PLAN.

TOGETHER WITH UTILITY AND POWER EASEMENTS NECESSARY TO SERVE THE PROJECT.

TOGETHER WITH AN EASEMENT FOR ADDRESS AND EGRESS FROM THE PUBLIC ROAD TO THE PROJECT AREA, AS GENERALLY SHOWN UPON THIS PLAN.

SITE NAME AND NUMBER: HWY 680/CALAVERAS / CA-1028

SITE ADDRESS: 501 EAST CALAVERAS BLVD.
MILPITAS, CA

ASSESSOR'S PARCEL NUMBER: 028-25-001

APPLICANT: GENERAL DYNAMICS
4000 EXECUTIVE PARKWAY, #515
SAN RAMON, CA 94583

OWNER: FELCOR/SS HOLDINGS, L.P., A DELAWARE LIMITED PARTNERSHIP

ELEVATIONS SHOWN ARE BASED ON THE FOUND CITY OF MILPITAS BENCH MARK, BEING A TRANS STREET MONUMENT AT THE INTERSECTION OF HILVIEW DRIVE AND CALAVERAS BLVD. ELEVATION BEING TAKEN AS 26.049 FEET, AMSL, NOV 29.

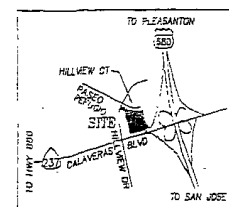
BEARINGS SHOWN ARE BASED UPON THE LINE BETWEEN THE TWO FOUND STREET MONUMENTS IN HILVIEW DRIVE, AS SAID MONUMENT LINE IS SHOWN ON THE PARCEL MAP RECORDED IN BOOK 550 OF PAGES 50 AND 51, SANTA CLARA COUNTY RECORDS. BEARING BEING TAKEN AS NORTH 14°31'18" WEST.

FLOOD PLAIN ELEVATION OF PROJECT AREA IN ZONE X (AREAS OF 500-YEAR FLOOD-SEE MAP), AS SHOWN ON FEMA FIRM MAP COMMUNITY-PANEL NUMBER 060344-0001G, DATED JUNE 22, 1995.

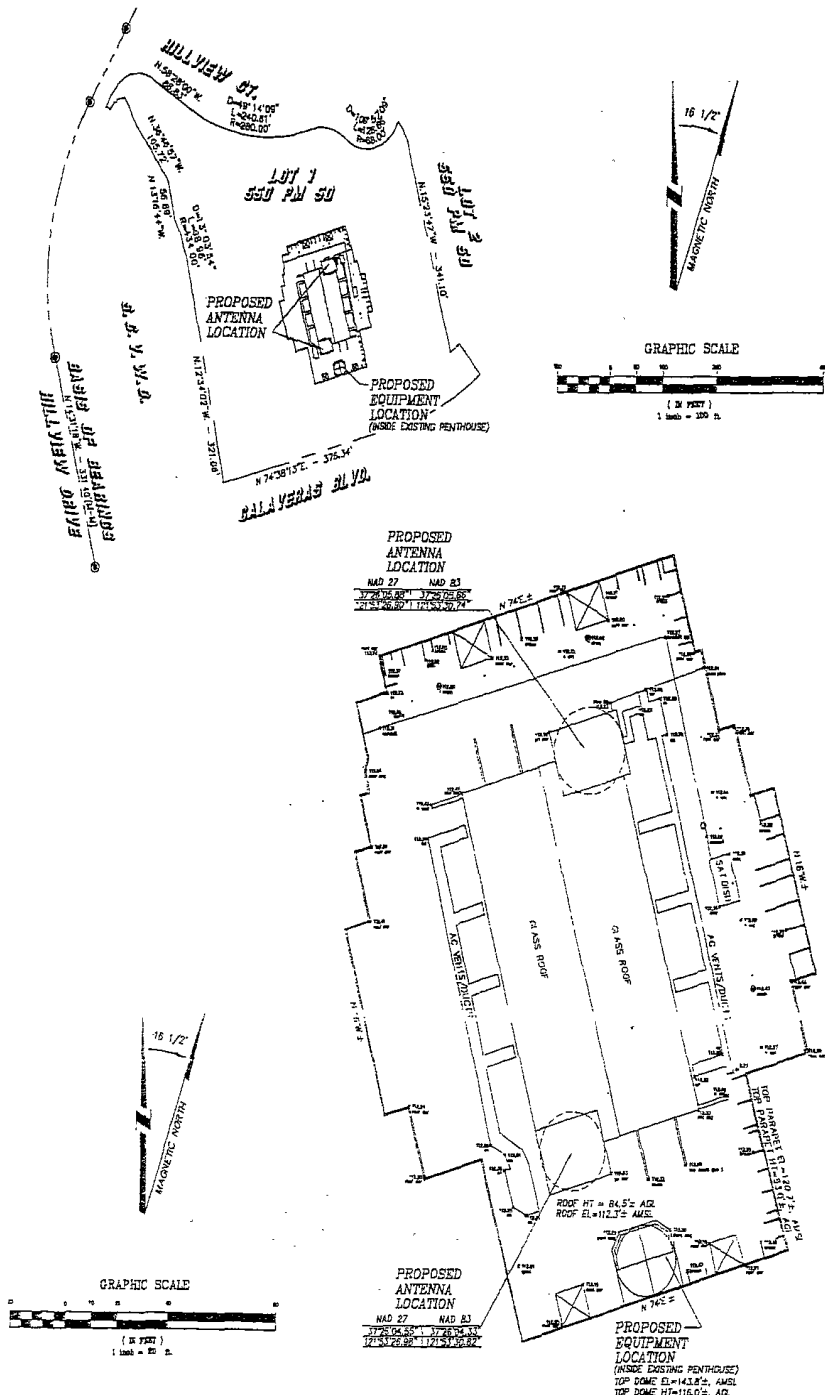
THE LOCATION OF EXISTING UTILITY FACILITIES HAS NOT BEEN RESEARCHED. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES TO OBTAIN INFORMATION REGARDING EXACT DEPTH OF BURIAL AND HORIZONTAL LOCATION OF UTILITY LINES PRIOR TO CONSTRUCTION. J.E. SCHURICHT AND ASSOCIATES ASSUMES NO RESPONSIBILITY FOR THE DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THIS PLAN.

FGC 1A CERTIFICATION:
LATITUDE AND LONGITUDE FOR THE PROJECT AREA WERE OBTAINED FROM INFORMATION PROVIDED BY A GPS SURVEY. THE GEODETIC POSITION SHOWN WAS DETERMINED UTILIZING THE TRIMBLE GPS PARTNERIZER AND THE TSC-1 DATA LOGGER. THE DATA WAS DIFFERENTIALLY CORRECTED WITH TRIMBLE PARTNERIZER SOFTWARE. J.E. SCHURICHT & ASSOCIATES CERTIFIES THAT THE LATITUDE AND LONGITUDE SHOWN ON THE PLAN ARE ACCURATE TO WITHIN +/- 15 FEET HORIZONTALLY, AND THE SITE GROUND ELEVATION NOTED AT PROJECT AREA AND ANTENNA LOCATIONS ARE ACCURATE TO WITHIN +/- 3 FEET VERTICALLY. THE HORIZONTAL DATUM (COORDINATES) ARE IN TERMS OF THE NORTH AMERICAN DATUM OF 1983 (NAD 83) AND ARE EXPRESSED AS DEGREES, MINUTES AND SECONDS TO THE NEAREST TENTH OF A SECOND. THE VERTICAL DATUM OF 1928 (NGVD 29).

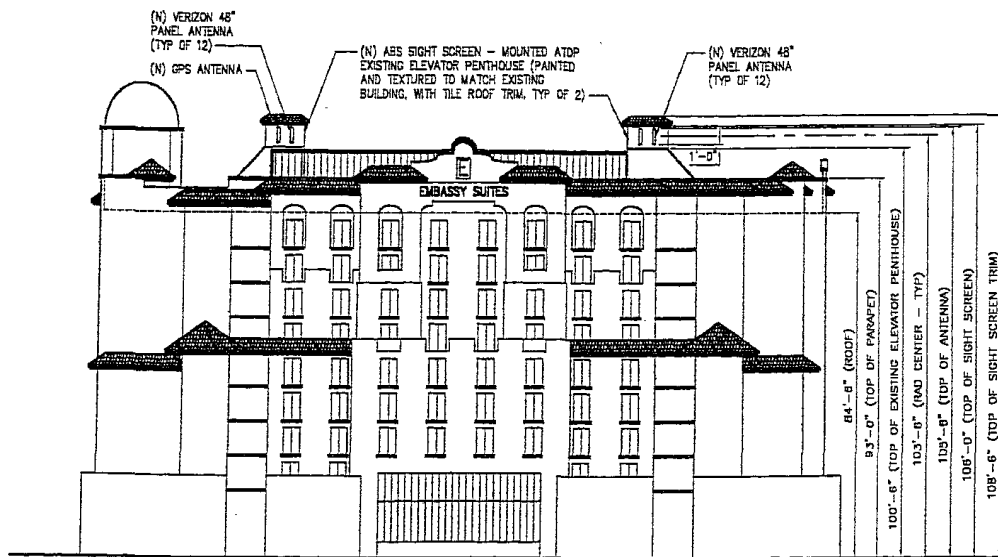
LOCATIONS, AS GENERALLY SHOWN ON THIS PLAN.



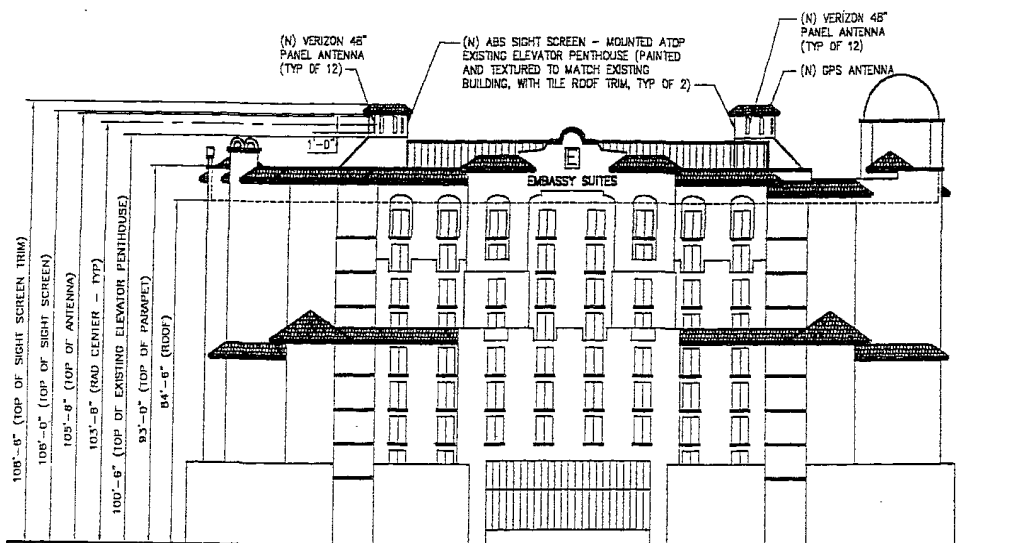
VICINITY MAP
N.T.S.



BOUNDARY SHOWN IS BASED ON RECORD INFORMATION AND FOUND MONUMENTATION. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES SHOWN ARE APPROXIMATE.




EAST ELEVATION
SCALE: 1/16"=1'-0"



WEST ELEVATION
SCALE: 1/16"=1'-0"

0' 4' 16' 32' 48'
SCALE: 1/16"=1'-0"

L.D. STROBEL CO. INC.
DESIGN / CONSTRUCTION

P.O. BOX 228 CONCORD, CA 94522
PHONE: 925-665-3241 FAX: 925-665-3350



REVISIONS

NO.	DATE	DESCRIPTION
1	3/14/01	PLANNING
2	3/22/01	PLANNING
3	4/23/01	PLANNING
4	4/30/01	PLANNING
5	7/31/01	CONST.
6	9/17/01	CONST.
7	12/5/01	CONST.
8	5/7/02	PLANNING
9	9/8/02	PLANNING
10	12/28/03	PLANNING

SITE ADDRESS:
901 EAST CALAVERAS BLVD.
MILPITAS, CA 95035
SANTA CLARA COUNTY
APN: 030-20-001

VERIZON WIRELESS
2785 MITCHELL DR. SUITE B
WALNUT CREEK, CA 94598

PROPOSED ANTENNA INSTALLATION
HWY 680 / CALAVERAS
LOCATION No. PS15002721131

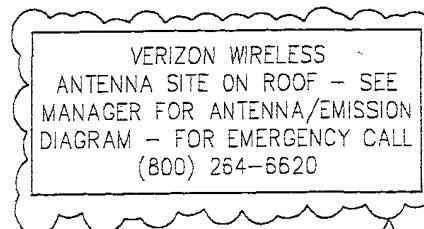
DRAWN: JWG I DATE: 3/6/03
FILE: 2229-A2
SHEET NO.

A-2



SEE SHEET A-1 FOR LOCATIONS

ROOFTOP SIGN DETAIL
SCALE: NONE



NOTE:
APPROXIMATE SIZE OF PLACARD 2.5'x7.0'.
PLACARD SHALL BE RED WITH WHITE LETTERS.
LETTERS ARE 1/4" IN HEIGHT (MIN) CARVED
THROUGH RED FACE EXPOSING WHITE LAYER
BENEATH. PLACARD SHALL BE PERMANENTLY
ATTACHED TO SURFACE.

SIGNAGE AT FIRE CONTROL STATION (LOBBY)
SCALE: NONE

X OF X



P.O. BOX 728 CONCORD, CA 94522
PHONE: 925-686-3341 FAX: 925-686-3350



REVISIONS

NO.	DATE	DESCRIPTION
1	12/18/03	PLANNING
2	12/28/03	PLANNING
3	1/23/01	PLANNING
4	1/23/01	PLANNING
5	6/18/01	CONST.
6	7/31/01	CONST.
7	5/22/01	CONST.
8	5/17/01	CONST.
9	12/5/01	CONST.
10	6/5/02	PLANNING
11	9/9/02	PLANNING

SITE ADDRESS:
901 EAST CALAVERAS BLVD.
MILPITAS, CA 95035
SANTA CLARA COUNTY
APN: 038-20-001

VERIZON WIRELESS
2785 WHITSELL DR. SUITE B
WALNUT CREEK, CA 94596

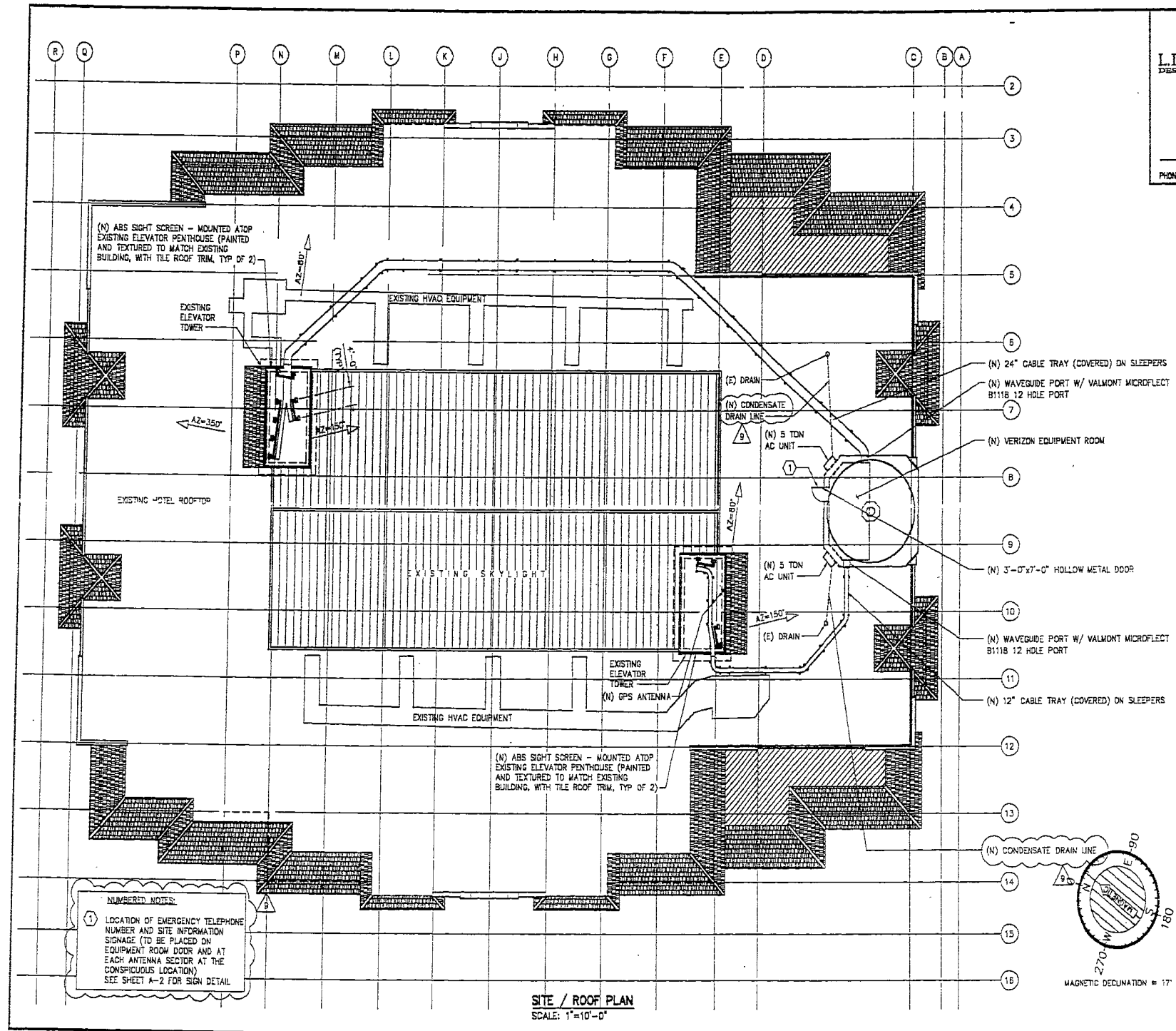
PROPOSED ANTENNA INSTALLATION
HWY 680 / CALAVERAS
LOCATION No. PS15002721131



DRAWN: JWS DATE: 3/5/03
FILE: 2228-A1
SHEET NO.

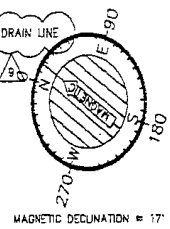
A-1

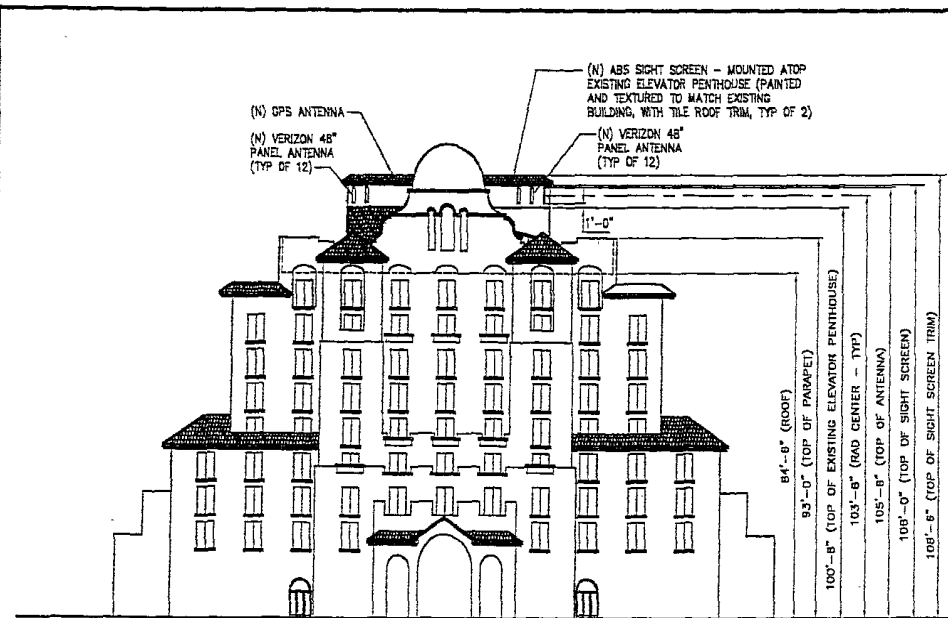
X OF X



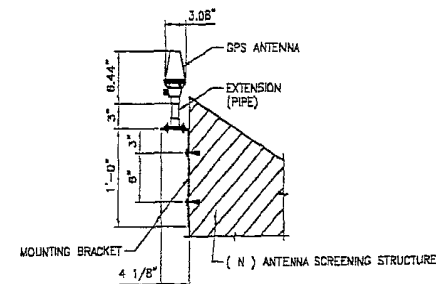
SITE / ROOF PLAN
SCALE: 1"=10'-0"

NUMBERED NOTES:
1 LOCATION OF EMERGENCY TELEPHONE NUMBER AND SITE INFORMATION SIGNAGE (TO BE PLACED ON EQUIPMENT ROOM DOOR AND AT EACH ANTENNA SECTOR AT THE CONSPICUOUS LOCATION) SEE SHEET A-2 FOR SIGN DETAIL





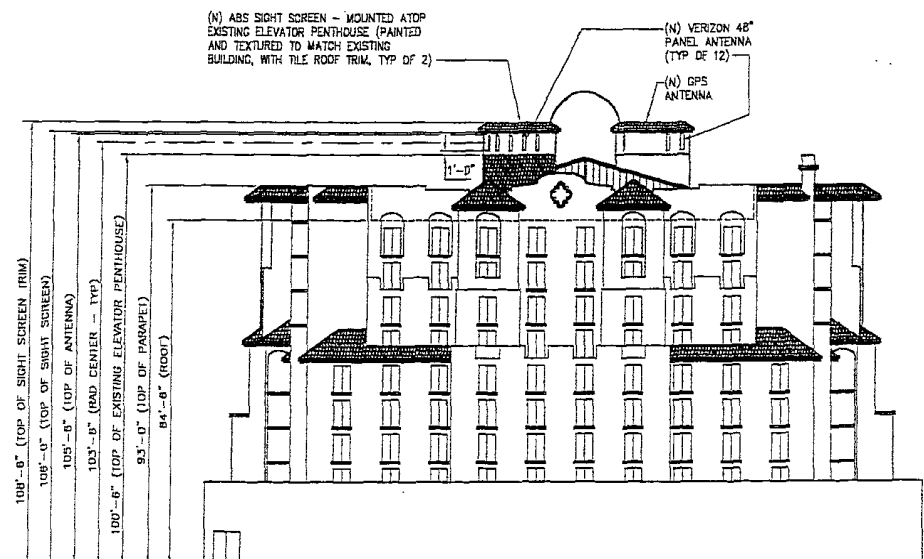
SOUTH (FRONT) ELEVATION
SCALE: 1/16"=1'-0"



NOTE:
ANTENNA AND MOUNT TO BE PAINTED
TO MATCH EXISTING BUILDING FACADE

GPS ANTENNA DETAIL (SIMILAR)
SCALE: 1-1/2"=1'-0"

0 6" 1' 2'
SCALE: 1-1/2"=1'-0"



NORTH (REAR) ELEVATION
SCALE: 1/16"=1'-0"

0 4' 16' 32' 48'
SCALE: 1/16"=1'-0"

L.D. STROBEL CO. INC.
DESIGN / CONSTRUCTION

P.O. BOX 228 CONCORD, CA 94322
PHONE: 925-886-3241 FAX: 925-886-3350



REVISIONS		
NO.	DATE	DESCRIPTION
1	3/14/01	PLANNING
2	3/22/01	PLANNING
3	4/23/01	PLANNING
4	4/30/01	PLANNING
5	6/7/01	PERMIT
6	9/7/01	CONSTRUCTION
7	3/7/02	PLANNING
8	9/5/02	PLANNING
9	12/26/03	PLANNING

SITE ADDRESS:
001 EAST CALAVERAS BLVD.
MILPITAS, CA 95038
SANTA CLARA COUNTY
APR: 038-28-001

VERIZON WIRELESS
2785 MITCHELL DR. SUITE B
MILPITAS, CA 95038

PROPOSED ANTENNA INSTALLATION
HWY 680 / CALAVERAS
LOCATION No. PS15002721131

verizonwireless

DRAWN: JUC DATE: 3/6/03
FILE: 7228-A3
SHEET NO.

A-3